

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

### Listing of Claims:

1. (Currently Amended) ~~A method for supporting multiple simultaneous concurrent tasks within a single web console in a central controlled distributed scalable virtual machine ("CCDSMV") environment, said method comprising~~

~~(a) — a user logging in from a web console of a console host to said CCDSMV environment;~~

~~(b) — said user from said web console of said console host obtaining all information of the target systems within said CCDSVM environment;~~

~~(c) — said users from said web console of said console host selecting a target system and initiating tasks based on said all information of said CCDSVM environment;~~

~~(d) — console supporting software on a control management station getting and storing tasks into a user space task list, and obtaining associated locks for each tasks; and~~

~~(e) — console supporting software distributing multiple tasks to multiple systems until all of said tasks are performed.~~

A method for supporting multiple simultaneous concurrent tasks within a single web-console in a central controlled distributed scalable virtual machine ("CCDSMV") environment, said method comprising

(a) console support software of control management station provides a user, from a web-browser of a console host anywhere on network, to login said CCDSMV environment; and

(b) said console support software provides said login user from said web-browser of said console host to obtain all information of system units and control management station within said CCDSVM environment whenever a said user login CCDSVM; and

(c) said console support software provides said login user from said web-browser on said console host to select a target system, initiate and submit tasks, which can run concurrently within said web-browser, based on said obtained information of said CCDSVM environment; and

(d) said console supporting software on a control management station gets and stores said tasks into a user space task list whenever receiving information of tasks from said web browser, and obtains associated locks for each tasks; and

(e) said console supporting software arranges and distributes said tasks to be run on said targeted systems until all of said tasks are performed and releases associated locks accordingly;

2. (Currently Amended) The method of claim 1, wherein (a) further includes:

~~said web console of said console host getting a login web page from said console supporting software of said control management station;~~

~~—— said user providing an account name and a password information to said login web page on said web console of said console host;~~

~~—— said web console of said console host sending the authentication information to said console supporting software of said control management station.~~

said console support software of said control management station provides a login web page to said web-browser; and

—— said console support software of said control management station provides said user to input password and account information for authentication in said login web-page; and

—— said web-browser of said console host transmits the authentication information to said console support software of control management station upon user's submitting.

3. (Currently Amended) ~~The method of claim 1, wherein step (a) further includes said console supporting software of said control management station performing an~~

~~authentication validation checking, wherein said authentication validation checking further includes determining whether a user is allowed to login.~~

The method of claim 1, wherein (a) further includes:

said console supporting software of said control management station performs authentication validation checking after receiving said authentication information from said web-browser, wherein said authentication validation checking further includes determining whether a user is allowed to login.

4. (Currently Amended) ~~The method of claim 1, wherein, step (a) further includes multiple users logging in said console host through multiple web consoles of multiple different console hosts concurrently.~~

The method of claim 1, wherein (a) further includes:

said console support software provides multiple users, each from his/her own web-browser of his/her console host anywhere on network, to concurrently login to said CCDSVM environment.

5. (Currently Amended) The method of claim 1, wherein (b) further includes:

~~said console supporting software of said control management station receiving necessary information from service software modules of all system units via communication link between them; and~~

~~said console supporting software of said control management station sending information of all said system units, said control management station and others to said web console of said console host.~~

said console supporting software of said control management station receives necessary information from service software modules of all system units via communication link between them; and

said console supporting software of said control management station sends information of said system units if there is one or more system units on network to said

web-browser of said console host , and sends said information of control management station to said web-browser of said console host;

6. (Currently Amended) ~~The method of claim 1, wherein, step (b) further includes obtaining information relating to the IP address of each unit within said CCDSVM, and initiating tasks in said CCDSVM environment in response to said information.~~

The method of claim 1, wherein (b) further includes:

said obtained information of system units and control management station are related to and are used by said user to initiate tasks; and said obtained information are resources and configuration information of said system units and control management station.

7. (Currently Amended) ~~The method of claim 1, wherein, step (c) further includes:  
—— initiating multiple simultaneous concurrent tasks for a target system or for several different target systems from a single web console of a console host in response to information obtained by said console support software; and  
—— sending task information from said web console of console host to said console support software modules of said control management station.~~

The method of claim 1, wherein (c) further includes:

a said user can and may initiate multiple simultaneous concurrent tasks from a single web-browser of a console host for a target system or for several different target systems based on said obtained information provided by said console support software; and said task information will be transmitted from said web-browser of said console host to said console support software modules of said control management station; and said tasks may be any of bellow

move or transmit data such as a multiple Gig-bytes data file or any formed data from any point or any system to another point on same system or to another system within CCDSVM; and

configure entire resources in CCDSVM environment; configure, partition, and assign entire storage system (raid/disk) within CCDSVM; and

setup authentication of specific user from a specific web-console with certain privilege for entire CCDSVM or for one or several systems, which could be any system unit or control management station; and

setup authentication for services of CCDSVM to provide to clients; and  
monitor and display network, storage, CPU, processes and threads activities and status for entire CCDSVM; and

create and mount file system, file and directory structures, and performing all related data file operations on either control management system or system units; and  
all kind of tasks that can be performed on regular native computer user work (operating) environment.

8. (Currently Amended) The method of claims 1, wherein (c) further includes:

~~—— based on information obtained from said console support software of said control management station, multiple users on multiple console hosts, each of them from a single web console of multiple console hosts, initiating multiple simultaneous concurrent tasks for a target system or for several target systems;~~

~~—— the target system being any of system units or a control management station; and~~

~~—— task information is send from said web console of console host to said console support software modules of said control management station.~~

based on information obtained from said console support software of control management station, multiple users, each from his/her own single web-browser of his/her console host anywhere on network, each user can and may initiate multiple simultaneous concurrent tasks for a target system or for several target systems from each said single web-browser; and

said target system could be any of system units or a control management station;  
and

said task information is sent from said web-browser of console host to said console support software modules of said control management station.

9. (Currently Amended) The method of claim 1, wherein (d) further includes:

~~said console supporting software of said control management station getting task information from said web console of said console hosts;~~

~~said console supporting software of control management station storing information of each task at a giving time into a valid slot of a user space task list;~~

~~said console supporting software of control management station acquiring associated locks to protect resources used by each task and further to prevent each task from interfering each other or from blocking each other.~~

said console supporting software of said control management station gets task information from said web-console of said console hosts;

said console supporting software of control management station stores information of each task one at a time into a valid slot of a user space task list;

said console supporting software of control management station acquires associated locks to protect resources used by each task and further to prevent each task from interfering each other or from blocking each other.

10. (Currently Amended) The method of claim 1, wherein (d) further includes:

~~said locks acquired for each task being conventional or non-conventional lock;  
—— said conventional lock acquired and released by same thread; and  
—— said non-conventional lock acquired by a first thread and released by a second thread.~~

said locks acquired for each task can be conventional or non-conventional lock;

said conventional lock can be acquired and released by same thread; and

said non-conventional lock can be acquired by one thread and can be released by a another thread.

11. (Currently Amended) ~~The method of claim 1, wherein step (e) further includes based on task information, said console support software of said control management station determining which target system is selected to perform the task.~~

The method of claim 1, wherein (e) further includes:

based on said task information, said console support software of said control management station determines which target system is selected to perform said task.

12. (Currently Amended) ~~The method of claim 1, wherein step (e) further includes transmitting task information from said console support software of control management system to the service software module of the target systems.~~

The method of claim 1, wherein (e) further includes:

if the target system of a task is a system unit, the console support software of control management station transmits the task information to the service software module of the targeted system unit and said task to be performed on the targeted system unit; and if the target system of a task is control management station, said task will be performed on control management station.

13. (Currently Amended) The method of claim 1, wherein (e) further includes:

~~said console support software of said control management station or the service software module of system unit determining whether an additional thread is required to carry out the tasks.~~

said console support software of said control management station or the service software module of system unit determines whether an additional thread is required to perform the tasks; if there is need, an additional thread is created to perform the task; otherwise, the threads of the console support software modules of control management station, or the threads of service software modules of system unit performs the task.

14. (Currently Amended) ~~The method of claim 1, wherein, step (e) further includes said console supporting software determining whether a task is permitted to run on a specific system identified by said user.~~

The method of claim 1, wherein (e) further includes:

said console supporting software determines whether a said user is permitted to run a specific task, and to determine whether a said user is permitted to run a task on a specific system.

15. (Currently Amended) ~~The method of claim 1, wherein, step (d) and step (e) also includes said associated locks being released one at a time along with each task's executing up to a point that task is done.~~

The method of claim 1, wherein e) also includes:

said associated locks are released one at a time along with each task's executing up to a point that task is finished to run.

16-27. (Cancelled).

28. (Currently Amended) ~~A central controlled distributed scalable virtual machine ("CCDSMV") comprising:~~

~~a central control management station capable of distributing multiple tasks to multiple systems substantially the same time;  
system units coupled to said central control management station;  
console hosts coupled to said system units;  
a network infrastructure coupled to said console hosts; and  
a two level security authentication scheme used in said CCDSVM environment,  
wherein a first level of security authentication is configured to impose on said central control management station, wherein a second level of security authentication is configured to impose on said system units.~~

A web-based central controlled distributed scalable virtual machine ("CCDSMV") comprising

a central control management station may coupled and connected with one or multiple system units through network infrastructure, and to be accessed by users on console systems or on client systems through said network infrastructure; and

a set of software modules running on a control system, on system units, and on console system to provide users through web-browser to control, operate, and manage said CCDSVM via said network infrastructure; and



a said method of supporting multiple simultaneous concurrent tasks over systems of CCDSVM within a single web-browser for each user anywhere on said network;  
and

a scheme of providing each login user from their login web-browser to obtain all information of systems in CCDSVM; and

a web-based user administration scheme to allow privileged user from a web-browser to create and setup other privileged and non-privileged user profiles; and

a two level security authentication scheme used in said CCDSVM environment, wherein a first level of security authentication is configured to impose on said central control management station, wherein a second level of security authentication is configured to impose on said system units; and

a method of organizing system units to form a larger scale layered system nodes structure and let middle layer system unit with dual capability of control management station and system unit for supporting user more efficiently select target system and run concurrent tasks on target system.

29. (Currently Amended) The claim of 28

~~— wherein said first level of security authentication includes the login authentication having password checking and allocating a portion of computing resource to said user; wherein said second level of authentication includes an allocation a specific number of said system units to said user for performing specific tasks on permitted said system units in said CCDSVM environment; and wherein said second level of authentication also includes the authentication of specific services of the specific system unit, which provides web services to specific clients.~~

wherein said first level of security authentication includes the login authentication having user account and password checking, the authentication of

specific users to perform specific tasks on the control management station, and allocating a portion of computing resource to said user; and

wherein said second level of authentication includes the authentication of specific users to access specific number of system units, and the authentication of specific users to perform specific tasks on permitted system units in CCDSVM environment.; and

wherein said second level of authentication also includes the authentication of specific services of the specific system unit, which provides services to specific clients; and

wherein said larger scale layered system node structure having said middle layer system units must have software modules of both control management station and system unit.

30 (Cancelled).

31-36. (Cancelled).

37. (Currently Amended) ~~A method for supporting multiple simultaneous concurrent tasks within a single web console comprises:~~

~~providing a group of computer systems having at least one control system, and one or more server systems connected together through a network media, wherein said group of computer systems are controlled, operated, and managed by said control system with a set of software modules running on either a control system or on server systems in said group of systems;~~

~~providing multiple users login concurrently each from web browser of client system into said control system;~~

~~providing said users from a single web browser on a client system to obtain information relating to system configuration and resources of control system;~~

~~providing said user from a single web browser of client systems to select said target systems, which is either a said control system or server systems, and to initiate~~

~~multiple simultaneous concurrent tasks over the said configuration and resources information on selected target systems;~~

~~providing said web console supporting software on control management station gets and stores tasks from each users on client systems into an user space task list, and also obtains the associated locks for each tasks; and~~

~~executing tasks arranged by said console supporting software on target systems.~~

A method for supporting multiple simultaneous concurrent tasks within a single web-browser comprises

providing a group of computer systems having at least one control system, and may have one or multiple system units connected together through a network media, wherein said group of computer systems are controlled, operated, and managed by said control system with a set of software modules, which is compatible with said set of software modules of CCDSVM, running on control system and may on said system units if there are one or multiple said system units in said group of systems;

said a software modules provide multiple users login concurrently, each user from a web-browser of a system anywhere on said network, into said group of systems;

said software modules provide said users, each from a single web-browser on a client system anywhere on said network, to obtain information relating to system configuration and resources of control system and system units whenever said user login to said control system; and

said software modules provide said users, each from a single web-browser of a client systems, to select a said target system, which is either a said control system or system unit, and to initiate tasks, which can run concurrently within a single browser, based on said obtained configuration and resources information on selected target system;

said software modules gets and stores tasks transmitted from each user's web-browser on client systems into a user space task list on said control system and also obtains the associated locks for each task whenever receiving each task information transmitted from each user's said web-browser; and

said software modules arranges each task to be run on target systems until each task got finished and releases associated locks along with each task's executing up to the point of each task's finishing.

38: (New) The claim 28 further includes:

if there is no any system units on said network, said CCDSVM degenerated as a single standalone system; and

said standalone system will inherit all property of said web-based central controlled distributed scalable virtual machine ("CCDSMV") except for those properties involving said system unit on the network.

39: (New) The claim 28 further includes:

said software of CCDSVM includes software modules on said control system, system units, and console system; and

said control system configured with software modules of web server software, console support software, which include web-interface software modules and control management software modules, and may include a native conventional web-browser; said system unit configured with said service software; and said console system configured with web-browser; and

said software of CCDSVM can be implemented with any suitable programming languages such as C, C++, Java, JavaScript, Perl, and so forth, and any markup language for web such as HTML, XML, WML, and so forth.

40: (New) The claim 28 further includes:

said control system (control management station), said system unit, and said console system could be a server system, a desktop system, a laptop system or various type of computational system, such as a communication device; and

said system unit could be a video server, web server, database server other servers, storage block data server (SAN unit), network attached storage (NAS), a security monitor device, a communication device PDA or cell phone, and other devices such as a Raid/Disk and so forth; and

said systems of CCDSVM are configured and run with operating system such as Linux, various Unix, MS Window, MAC OS, real-time OS, and so forth without limit.

41: (New) The claim 28 further includes:

said network infrastructure represents any kind of communication link between control system, system units, console system, and client system; and said communication link could be an infrastructure of internet, intranet, LAN/WAN; and said link could be connected by using communication media such as cable (Ethernet, Fiber, SCSI, and other), wireless media, or bus; said communication link also may include network equipment such switch/routers/adaptor and so forth; and

said network infrastructure connects control system, console system, system units, and as well as connecting client system to let them access CCDSVM; and

said network infrastructure may also include Internet software structure such as domain name server and so forth; and

the communication protocols used over said communication link could be various IP-based or non-IP-based protocols.